

An Inward Look

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AN INWARD LOOK

By Robert Oppenheimer

THE conflict with Communist power from time to time throws a harsh light on our own society. As this conflict continues, and its obduracy, scope and deadliness become increasingly manifest, we begin to see traits in American society of which we were barely aware, and which in this context appear as grievous disabilities. Perhaps the first thus to come to attention is our inability to give an account of our national purposes, intentions and hopes that is at once honest and inspiring. It is a long time since anyone has spoken, on behalf of this country, of our future or the world's future in a way that suggested complete integrity, some freshness of spirit and a touch of the plausible.

Two other national traits have more recently aroused grave concern. Because the conflict with Communist power is taking place concurrently with an extreme acceleration of a technological revolution, and in particular because these last years have marked the maturing of the military phases of the atomic age, public attention has been drawn to the relative effectiveness of the Soviet system and ours in the training and recruiting of scientists and technical people. This comparison has shown that, in a field where once we were better than the Russians, we may soon be less good. The Soviet system, by combining formidable and rare incentives for success in science and technology with a massive search for talent and with rigorous and high standards in early education, appears about to attract to scientific work a larger fraction of its population than we shall be doing.

When we learned this, it was natural to turn our attention to its causes. Some of these lie in the relatively low esteem in which learning is held in this country and, above all, in our indifference to the profession of teaching, especially teaching in the schools, a low esteem that is both manifested and caused by the fact that we pay our teachers poorly and our scientists not too well. The grimness of life in Soviet countries makes it easy to translate prestige into luxury and privilege. We do not want it so here. Yet on closer examination we have seen that in our own schools

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educational standards are far lower for languages, mathematics and the sciences than in their Soviet counterparts. We have learned that many of our teachers are not really versed in the subjects which it is their duty to teach and, in many cases, their lack of knowledge is matched by their lack of affection or interest. In brief, we have come upon a problem of the greatest gravity for the life of our people by matching ourselves against a remote and unloved antagonist.

Something of the same kind appears to be happening in a quite different area. This has to do with the ability of our Government—in fact, with the ability of our institutions and our people through our Government—to determine national policy in those areas that have to do with foreign affairs and strategy, military and political. To quote Mr. W. W. Rostow in an address to the Naval War College late in 1956:

I do not believe we as a nation have yet created a military policy and a civil foreign policy designed to fulfill [our purposes] and to exploit the potentials for social and political change favorable to our interest within the Communist Bloc... Historically, the United States has thrown its energies into the solution of military and foreign policy problems only when it faced concrete, self-evident dangers.

Or again, Mr. Henry Kissinger wrote in the April 1957 issue of Foreign Affairs:

By establishing a pattern of response in advance of crisis situations, strategic doctrine permits a Power to act purposefully in the face of challenges. In its absence a Power will constantly be surprised by events. An adequate strategic doctrine is therefore the basic requirement of American security.

It is now a widely held view that, despite the organization of the executive branch of the Government to cope precisely with long-range problems, foreign policy and military strategy; despite the rôle assigned to the Joint Chiefs of Staff, the National Security Council and the Policy Planning Staff of the Department of State; despite the availability to these organizations of the technical and intellectual talent of the whole of this country and, to a more limited extent, of the whole free world—despite all this, the United States has not developed an understanding of its purposes, its interests, its alternatives and plans for the future in any way adequate to the gravity of the problems that the country faces. There is a widespread impression that we live from astonishment to surprise, and from surprise to astonishment, never adequately forewarned or forearmed, and more often than

not choosing between evils, when forethought and foreaction might have provided happier alternatives. Why should this state of affairs exist in a country rich with wealth and leisure, dedicated to education, with a larger part of its citizenry involved in education than in any other land at any other time, with more colleges, universities, institutes and centers than anyone cares to count, and at a time when unparalleled powers in the hands of a dedicated and hostile state threaten us more grievously than ever since the early days of the Republic?

There are, of course, other national traits of which we can scarcely be proud, on which neither the atomic age nor the conflict with Communism has put much emphasis. We may think, for instance, of our great wantonness with our country's resources; we may think of the scarcity of instances in which a concern for public beauty and harmony has made of the physical environment in which we live that comfort to the spirit which the loveliness of our land and our great wealth could well make possible.

Indeed, all of the traits in which we judge ourselves harshly could have been drawn by historians comparing us with past cultures, or observers of the current scene comparing us with those contemporary. We should then, perhaps, have noted that no people has ever solved the educational problem which we have put to ourselves, and that no government, in a world in which few governments succeed for very long, has ever succeeded in a problem of the scope and toughness of that which faces ours. Indeed we could recognize the traits of weakness in our society in terms of a norm or an ideal, and hear of them from the philosopher or prophet. I believe, in fact, that these ways are the more constructive, because I believe, as will be more evident in what follows, that the traits that bother us are signs of a rather deep, refractory and quite unprecedented cultural crisis, and that in the end they will yield, not to symptomatic therapy, but to changes in our life, changes in what we believe, what we do and what we value.

For the problems of our country and our age have hardly in historical times arisen in anything like their present form; certainly they have never been resolved. If our adversary appears to have solved them better than we, it may be healthy for us to note that; it can hardly be healthy for us to adopt his means. He knows what he wants, because he has a simple theory of the

meaning of human life and of his place in it. With the strength of that confidence, he has a government prepared to take, at vast human cost, all necessary steps to reach his ends. That there is only a small, fragmentary, largely obsolete taint of truth to his theory, that it excludes the greater part of truth, and the deeper, should give us some confidence that he will not succeed. That his failure may be marked by a vast if not universal human involvement, and an unparalleled devastation and horror, should temper our pleasure in this prospect and return us to the solution of our problems on our own terms, in our own way, in our own good time.

For the traits of weakness in our society we can see grounds that are at once multiple, intelligible and ironic. I think that the three weaknesses—in our education, in our faltering view of the future, and in our difficulties in the formulation of policy have some common grounds; but they are not the same, and to follow them all is not the purpose of this paper. Certainly egalitarianism and our traditionally cherished tolerance of diversity, diversity precisely on the most fundamental issues of man's nature and destiny, his salvation and faith, certainly these qualities, long held as virtues, have much to do with our troubles in education where they define, as it were, the insoluble problem; they have much to do with the difficulties of prophecy and policy, which traditionally rest on consensus precisely with regard to those matters where we are dedicated to difference. The good fortune of the country, speaking in large terms and over the centuries, and its consequent optimism and confidence, have something to do with our troubles. Perhaps we would not change these things, but we must give weight to them, when we compare ourselves with Athens, or Elizabethan England, or Victorian, or seventeenth century France.

Our weaknesses, of course, have a touch of irony. It is our very confidence in education, our determination that it should be available to all, our belief that through it man will find dignity and freedom, that have played so large a part in reducing our educational system to the half-empty mockery that it now is. When, for the first time in years of formal peace, we have devoted effort, study, thought and treasure to the quest for military security, we have brought about the most fearful insecurity that has been known to man in what we know of his history.

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It is commonly said that our national culture favors practice over theory, action over thought, invention over contemplation. There is some truth to this thesis. It should not be exaggerated. For one thing, the balance between operation and reflection must always, everywhere, numerically favor the doers as compared to the reflectors; even in Athens there were quite a few Sophists for one Socrates; and I find it hard to imagine any society in which the world's work does not occupy more people more of the time than does an understanding of the world. For another, the balance between these aspects of life has been accented by circumstance, in that the doers in our country have had great good fortune to mark and celebrate their deeds: the country's wealth, its spaciousness, its wide measure of freedom, and, on the whole, its prevailing optimism. It would take quite considerable accomplishments of theory and understanding to match the brilliance, often almost the impudence, of our material creations.

Our past has always been marked by a few original and deeply reflective minds whose work, though it was part of the intellectual tradition of Europe and the world, has nevertheless a peculiarly national stamp, as in the four names of Peirce, Gibbs, James, Veblen. Today, in almost all fields of natural science, and in some others as well, our country is preëminent in theory as it is in experiment, invention and practice. This has meant a great change in the educational scene, as far as higher education is concerned, in the graduate schools, in post-doctoral work, in the institutes and universities. Part of this, it is true, has come about because of misfortunes abroad: the two wars in Europe, and the Nazis, the initial effects of Communist power in Russia, which for a time at least made conditions of serious study very difficult. It has been brought about in part by the coming to this country of scholars in refuge from their régimes, from tyranny and trouble abroad. Nevertheless it is true that today a young man wishing the best training in theoretical physics or mathematics, theoretical chemistry or biology, will be likely to come to this country, as three decades ago he would have gone to the schools of Europe. It was important, after the end of the Second World War, when there was much public interest in the successes in applied science which the war years had brought about in this country, to combat any exaggerated sense of American superiority by pointing to the

great contributions for which we were in debt to Europeans and others from other lands; but to repeat today that which was only partially true then, namely that Americans excel in practical undertakings but are weak in theory, is to distort the truth. It should be added, of course, that the number of men engaged in theoretical science is always small and, even with us today, it is very small. Their work and their existence can have little direct bearing on the temper and style of the country.

Having said all this, it does seem to me that in comparison with other civilizations—that of classic India surely, that on the continent of Europe, and probably even that of England, where theory is brilliantly made but largely ignored in practice—ours is a land in which practice is emphasized far more than theory, and action far more than contemplation. In the difficult balance of teaching, we tend to teach too much in terms of utility and too little in terms of beauty. And if and when we "do it ourselves," it is unlikely to be learning and thought.

To see the bearing of this trait, we should recognize another feature of the American landscape: in important, deep and complex ways, this is a land of diversity; and it tolerates, respects and fosters diversity in the form of a true pluralism. There is much theory made in the United States: cosmological theory, theory of genetic processes, theory about the nature of immunity, theory about the nature of matter, theory about learning, about prices, about communication; but there is no unifying theory of what human life is about; there is no consensus either as to the nature of reality or of the part we are to play in it; there is no theory of the good life and not much theory of the rôle of government in promoting it. The diverse talents, skills, beliefs and experience of our people contribute effectively to the solution of a concrete problem, to answering the well-defined question, to the building of a machine, or a structure, or a weapon system; and in such concrete and limited exercises, the diversity and strangeness of the participants is harmonized by the community of the concrete undertaking. The team of experts, sometimes including experts from social science, was an immensely successful invention for wartime research, and continues to be in many forms of technical enterprise. It continues to be inappropriate, and tends to languish, in the general undertakings of academic life.

American pluralism can no doubt in part be understood in terms of our history, and those features in which we differ from most of the communities of Europe and of much of Asia. We may think of the relatively primitive communities in the Indian villages of the Southwest, which some of us may still remember from the earlier years of this century. The quality of their life was relatively static and highly patterned; all of its elements were coherent, and were rendered unified and meaningful by religious rites and religious doctrine. Change was slow, and communication adequate to the limited experience of the villagers. Such communities represent almost an ideal of unity, of common understanding, and of a monistic view of the world. There has been little of the village in American life. The frontier, the openness of the country, and later the immense rapidity of change and the tumult of motion and traffic, have given us a very different national experience. Probably for two centuries New England had the stability of village life; and I believe that we see today, in the coherence, firmness and mutual understanding of its survivors, one of the most stable and unified elements in our country. Probably, although I know less of this, one could find a similar story in the South, though the fortunes of the last hundred years have dealt harshly with it.

Even if we turn our thoughts to Europe, the site of so much of the commotion, disillusion and variety which characterize our own land, we see important differences; there is a long past of limited mobility, culminating in the thirteenth century in the unified view of all matters important to man, in a universe determined by God, with God omnipresent, with the unvarying natures of all finite things, and the ever-present end and purpose of man's life. When this world began to break, it broke slowly, first in the minds of the philosophers and scientists. It was not until the seventeenth century that the turn from contemplation to action can be seen with any completeness; long after it occurred, its consequences were still troubling to John Donne: "'Tis all in peeces, all cohaerence gone, All just supply, and all Relation." Man's awareness of his power came slowly to Europe; it came to people bound by a common tongue, a common habit and common traditions in taste, manners, arts and ways.

Compared to all this, Americans are nomads. There is, of course, much in common in what brought people to this country; but in overwhelming measure, what was common was either negative or personal and practical: the desire to escape repression, or the hope of making a new fortune. In the formative years of our

history, emptiness, the need and reward for improvisation, variety, and the open frontier endowed the differences between men with weight and sanction. Our political philosophy undertook to reconcile the practical benefits of union with the maximum tolerance of diversity. To all of this has come within the last century, and complementing the closing of the physical frontier, a new source of change, more radical and in the end more universal than those before. This lies, on the one hand, in the unprecedented growth of knowledge, whose time scale, estimated apprehensively as a half century two hundred years ago, could better now be put at a decade; and with this, based partly upon it, partly upon accumulated wealth, and partly on the tradition of freedom and mobility itself, a technological explosion and an economy unlike any the world has seen.

Early in this century, William James wrote:

The point I now urge you to observe particularly is the part played by the older truths. . . . Their influence is absolutely controlling. Loyalty to them is the first principle—in most cases it is the only principle; for by far the most usual way of handling phenomena so novel that they would make for a serious rearrangement of our preconception is to ignore them altogether, or to abuse those who bear witness for them.

In our time the balance between the old truths and the new has been unhinged, and it is not unnatural that most men limit, in the severest possible way, the number and the kind of new truths with which they will have to deal. This is what makes the intellectual scene a scene of specialists, and this is what makes our people, for all the superficial evidences of similarity, more varied in their experience, more foreign to each other in the tongues which they use to talk of what is close to them, than in any time or place which comes to mind; this is what limits consensus to statements so vague that they may mean almost anything, or to situations so stark and threatening and so immediate that no theoretical structure, no world view, need intervene.

Perhaps the most nearly coherent of all our large theoretical structures is that of natural science. It is hardly relevant to many of the questions of policy and strategy with which our Government must be confronted; to some it is. This coherence is, however, of a very special sort: it consists by and large in an absence of contradiction between any part and any other, and in a pervasive, often only potential mutual relevance. It does not consist in a structural coherence by which the whole can be derived from

some simple summary, some key, some happy mnemonic device. There are thus no fundamentals of science. Its largest truths are not definable in terms of common experience; nor do they imply the rest. Our knowledge of nature is in no true sense common knowledge; it is the treasure of the many flourishing specialized communities, often cut off from one another in their rapid growth. Never has our common knowledge been so frail a part of what is known. Natural science is not known, and probably cannot be known, by anyone; small parts of it are; and in the world of learning there is mediation in the great dark of ignorance between the areas of light.

In assessing the practical import of scientific developments, the Government may be faced by a reflection of this situation. Even in so relatively limited a field as the peacetime hazards of atomic radiation, it cannot turn to an expert for the answer. It turns to the National Academy of Sciences, which assembles a series of committees, both numerous and populous, whose collective knowledge and collective recognition of ignorance is, for the time being, our best answer.

In other aspects of intellectual life, more relevant to policy and to strategy, we find a situation not wholly dissimilar, though less formalized and less clearly recognized. In our own internal affairs, knowledge on the part of the Government of what the situations in fact are with which it must deal is complemented by a traditional safeguard in our political institutions. If, in fact, the executive and legislative branches of the Government have erred in their assessment of the problems of Northwestern lumbermen. or of maritime labor, or of Marine recruits, there is opportunity for those who are specialists in these ways, because they live in them, to be heard; and there is an underlying tolerance, sometimes violated, sometimes ignored, which yet gives to the voice of those most deeply concerned, and most intimately and immediately knowledgeable, the grave weight of the doctrine of the concurrent majority. In foreign affairs, in matters affecting other lands and people, no such protection and no such redress exist. Here the Government must rely most heavily on what is essentially scholarship: what the historian, the linguist, the artist and all others who, with the slowly learned historian's art of judging, evaluating and understanding, can give as an intimate glimpse of what goes on in foreign and often very strange lands.

Faced with all this, faced with the complexity, the variety and

the rapid change which characterize both the intellectual scene and the world itself, there is a terrible temptation to seek for the key that is not there, the simple summary from which all else might follow. We have tended to do that in the wars of this century, with, it would seem most probable, consequences of great trouble when we have come to the end of the war. It was probably bad even in the First World War, when our Government had a relatively elaborate and learned theory which was widely accepted by our people, but which was not quite true. It was probably bad in the Second World War, where the theory seemed to be very primitive and to consist of the view that evil, however widely spread in the world, was so uniquely concentrated in the governments of the hostile Powers that we could forget it elsewhere.

A government may, for more or less valid reasons, reach a conclusion as to what its action should be, as ours does when we declare war, or when we adopt such relatively well-defined policies as the Truman Doctrine. Such decisions, reflecting the best estimate of the evidence available when they are made, are acts of will; clearly, further evidence which supports the decisions reinforces the will, makes the prosecution of the war or the execution of the doctrine more likely to be effective. Evidence that the decisions may have been in error or may no longer be timely has a contrary effect. The human commitment to its own decisions, the human reluctance to learn and to change should not be reinforced by any doctrine which deprecates the truth, and therefore the value, of what is inconsistent with past evidence and past judgment. The danger lies, not so much in that the new and conflicting evidence may be weighed and given too little weight; it is that it will not even be seen, that our organs of intelligence and perception will be coded, much as our sense organs are, by our commitment, so that we will not even be aware of inconsistency and novelty.

I believe that we are now deeply injured by the simplifications of this time. The cold war is real, it is bitter, and it is deadly. But it is not the only issue in the world, and for countless other peoples and their governments it is not the issue they see in the brightest, harshest light. Such global views tend to inhibit the reception of essential knowledge because in the light of our dominant doctrine this knowledge appears irrelevant or somehow does not fit. That we are indeed in this danger seems to me clear from

the extent to which the unfolding of history finds us always surprised.

There are two features of the situation that I have attempted to sketch that need a special comment. It seems to me that both the variety and the rate of change in our lives are likely to increase, that our knowledge will keep on growing, perhaps at a faster and faster rate, and that change itself will tend to be accelerated. In describing this world, there will probably be no synopses to spare us the effort of detailed learning. I do not think it likely that we are in a brief interval of change and apparent disorder which will soon be ended. The cognitive problem seems to me unprecedented in scope, one not put in this vast form to any earlier society, and one for which only the most general rules of behavior can be found in the past.

It also seems to me that we must look forward to a world in which this American problem is more nearly everyone's problem. The beginnings of this are perhaps as important in the present moods of Europe as are the history of the two Great Wars, Communism, the Nazis, and Europe's loss of political, military and economic power. The problems seem clearly implied in the determination of peoples in Africa and Asia, and in Central and South America, by means not yet devised and not at all understood, to achieve education, learning, technology and a new wealth. They form a part of the unrest, newly apparent in the intellectuals of the Soviet world, perhaps especially among their scientists, and increase the sombreness of any prospect of change from tyranny to freedom.

There are thus the most compelling external reasons why we, in this country, should be better able to take thought, and to make available in the pressing problems of policy and strategy the intellectual resources now so sorely lacking. They are needed in the struggle with Communism; they are needed if we are to have some understanding and some slight influence, in all the rest of the world, in the great changes that lie ahead for it. Awareness of this need will do us good; and I do not underestimate the value of its general recognition by the people of this country nor official recognition by their Government. It can only help to make money available to education and to teaching; it can only help to make the learned as well as the facile welcome in the proceedings of government policy-making. But though these measures are bitterly necessary, and though they are long

overdue, the real thing will not, I fear, come from them alone. There may be valid grounds for a difference of opinion as to whether an official recognition of a need, or even a generally understood recognition of a need among our people, will evoke the response to that need. What we here need is a vastly greater intellectual vigor and discipline; a more habitual and widespread openmindedness; and a kind of indefatigability, which is not inconsistent with fatigue but is inconsistent with surrender. It is not that our land is poor in curiosity, in true learning, in the habit of smelling out one's own self-delusion, in the dedication and search for order and law among novelty, variety and contingency. There is respect for learning and for expertness, and a proper recognition of the rôle of ignorance, and of our limits, both as men and as man; but of none of these is there enough, either among us, or in the value with which they are held by us, if indeed government by the people is not to perish.